

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re : Application of Koeune et al.  
For : **DISCONTINUOUS PLY FOR RUNFLAT TIRE  
CONSTRUCTION**  
Serial No. :  
Filed : concurrently herewith  
Group Art Unit :  
Examiner :  
Our Docket No. : DN1998203D01USA

February 5, 2004

**COMMISSIONER FOR PATENTS**  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**PRELIMINARY AMENDMENT**

Sir:

This is a preliminary amendment filed with a Divisional filing of US Application No. 09/889,248.

Please amend the referenced application as follows:

**IN THE CLAIMS**

Please cancel claims 1-5.

1.(cancelled) A pneumatic radial ply runflat tire having a tread (48); two sidewalls (43,45,70,90); a carcass comprising an outer radial carcass ply (57,77,97), two bead regions (56a,56b,76b,93b) each containing an inextensible annular bead (49a,49b,96b), a two-part discontinuous ply (52,72,92b) with one portion (52a,52b,72b,92b) contained in each sidewall and disposed between two wedge inserts (58a/59a, 58b/59b, 78b/79b, 98b/99b); and one or more belts located between the tread and the outer radial carcass ply, the tire being characterized in that:

each of the two portions (52a,52b,72b,92b) of the two-part discontinuous ply is made from two layers (64,66) of cross-biased fabric;

each of the cross-biased fabric layers is made of parallel-aligned cords (65,67);

the parallel-aligned cords of a first fabric layer (64) are oriented at an angle with respect to the radial direction that is approximately equal in magnitude but opposite in direction to the parallel-aligned cords of a second fabric layer (66) of the two layers of cross-biased fabric; and

the parallel-aligned cords of the respective fabric layers are oriented at angles of between 40 degrees and 65 degrees with respect to the radial direction.

2. (cancelled) The tire of claim 1 characterized in that:

the parallel-aligned cords (65,67) of the respective fabric layers (64,66) are preferably oriented at angles of between about 45 and 55 degrees with respect to the radial direction.

3. (cancelled) The tire of claim 1 characterized in that:

the parallel-aligned cords (65,67) of the respective fabric layers (64,66) are made of materials from the class of materials that includes nylon and rayon.

4. (cancelled) The tire of claim 1 characterized in that:

turn-up ends (97b) of the outer radial carcass ply (97) are substantially contiguous with the main structural portion of the outer radial carcass ply.

5. (cancelled) The tire of claim 4 characterized in that:

the free ends (101b) of the ply turn up ends (97b) extend from above the corresponding bead (96b) upward to the mid-height of the sidewall (90).

Please amend claims 6-20

6.(Currently amended) A pneumatic radial ply runflat tire having a tread (48); two sidewalls (43,45,70,90); a carcass comprising an outer radial carcass ply (57,77,97), two bead regions (56a,56b,76b,93b) each containing an inextensible annular bead (49a,49b,96b), a two-part discontinuous ply (52,72,92b) with one portion (52a,52b,72b,92b) contained in each sidewall and disposed between two wedge inserts (58a/59a, 58b/59b, 78b/79b, 98b/99b); and one or more belts located between the tread and the outer radial carcass ply, the tire being characterized in that:

each of the two portions (52a,52b,72b,92b) of the two-part discontinuous ply is made from one or more layers (80) of parallel cords (81) which are wavy with respect to the radial direction.

7. (Currently amended) The tire of claim 6, characterized in that:

the parallel cords (81) of each of the one or more layers (80) are defined by angles  $\gamma$  and  $\theta$  that are between 50 degrees and 100 degrees.

8. (Currently amended) The tire of claim 6, characterized in that:

the parallel cords (81) are made of metal.

9. (Currently amended) The tire of claim 8, characterized in that:

the parallel cords (81) are made of steel.

10. (Currently amended) The tire of claim 6, characterized in that:

the parallel cords (81) are made of fabric.

11. (Currently amended) The tire of claim 6 characterized in that:

turn-up ends (97b) of the outer radial carcass ply (97) are substantially contiguous with the main structural portion of the outer radial carcass ply.

12. (Currently amended) The tire of claim 11 characterized in that:

the free ends (101b) of the ply turn up ends (97b) extend from above the corresponding bead (96b) upward to the mid-height of the sidewall (90).

13. (Currently amended) A pneumatic radial ply runflat tire having a tread (48); two sidewalls (43,45,70,90) with shoulders (54a,54b,74b); a carcass comprising one or more outer radial carcass plies (57,77,97), two bead regions (56a,56b,76b,93b) each containing an inextensible annular bead (49a,49b,96b), an innerliner (44) a two-part discontinuous ply (52,72,92b) with one portion (52a,52b,72b,92b) contained in each sidewall and disposed between two wedge inserts (58a/59a, 58b/59b, 78b/79b, 98b/99b) of substantially equal flexibility; and one or more belts located between the tread and the outer radial carcass ply, the tire being characterized in that:

each combination of two wedge inserts with the portion of the two-part discontinuous ply is in a sidewall flex area located axially between the one or more outer radial carcass plies and the innerliner, and extending radially approximately from a location (55a,55b,75b) near the bead region (56a,56b,76b) to an approximate location (53a,53b,73b) near the shoulder (54a,54b,74b).

14. (Currently amended) The tire of claim 13 characterized in that:

each of the two portions (52a,52b,72b,92b) of the two-part discontinuous ply is made from two layers (64,66) of cross-biased fabric;

each of the cross-biased fabric layers is made of parallel-aligned cords (65,67); and

the parallel-aligned cords of a first fabric layer (64) are oriented at an angle with respect to the radial direction that is approximately equal in magnitude but opposite in direction to the parallel-aligned cords of a second fabric layer (66) of the two layers of cross-biased fabric.

15.(As filed) The tire of claim 14 characterized in that:

the parallel-aligned cords of the respective fabric layers are oriented at angles of between 40 degrees and 65 degrees with respect to the radial direction.

16. (Currently amended) The tire of claim 14 characterized in that:

the parallel-aligned cords (65,67) of the respective fabric layers (64,66) are preferably

oriented at angles of between about 45 and 55 degrees with respect to the radial direction.

17. (Currently amended) The tire of claim 14 characterized in that:

the parallel-aligned cords ~~(65,67)~~ of the respective fabric layers ~~(64,66)~~ are made of materials from the class of materials that includes nylon and rayon.

18. (Currently amended) The tire of claim 13 characterized in that:

each of the two portions ~~(52a,52b,72b,92b)~~ of the two-part discontinuous ply is made from one or more layers ~~(80)~~ of parallel cords ~~(81)~~ which are wavy with respect to the radial direction such that the parallel cords of each of the one or more layers are defined by angles  $\gamma$  and  $\theta$  that are between 50 degrees and 100 degrees.

19. (Currently amended) The tire of claim 18, characterized in that:

the parallel cords ~~(81)~~ are made of metal.

20. (Currently amended) The tire of claim 13 characterized in that:

turn-up ends ~~(97b)~~ of the outer radial carcass ply ~~(97)~~ are substantially contiguous with the main structural portion of the outer radial carcass ply; and

the free ends ~~(101b)~~ of the ply turn up ends ~~(97b)~~ extend from above the corresponding bead ~~(96b)~~ upward to the mid-height of the sidewall ~~(90)~~.